Claims

1. A compound analysis method, the method comprising determining a vector quantity having a number of dimensions equal to a number of features derived from the electrical output of an electrically active cellular network with each component of said vector being representative of a change in said feature resulting from the application of a compound to said electrically active cellular network and classifying said vector in accordance with a predetermined cluster analysis methodology.

2. A method as claimed in Claim 1, including providing a library of features characterising known compounds such that classification of said vector enables identification of the compound in accordance with a predetermined measure of statistical reliability.

3. A compound analysis system, the system comprising a micro-electrode array provided by a bio-compatible substrate having a plurality of electrodes situated thereon, said electrodes having an arrangement on said substrate corresponding substantially to that of an electrically active cellular network disposable in use thereon, a multi-channel amplifier coupled to said electrodes and an analyser operatively connected to said amplifier to determine for each active channel a vector quantity having a number of dimensions equal to a number of features derived from the electrical output of said electrically active cellular network with each component of said vector being representative of a change in said feature.

4. A compound analysis apparatus, the apparatus including a processor and a memory, the processor being operable in response to signals derived from a micro-electrode array connected, in use, thereto, to determine a vector quantity having a number of dimensions equal to a number of features derived from the electrical output of said micro-electrode array with each component of said vector being representative of a change in said feature, wherein said memory contains a library of features characterising known compounds such that classification of said vector enables identification of a compound deposited, in use, on said array, in accordance with a predetermined measure of statistical reliability.

5. An apparatus as claimed in Claim 4, including a storage device, such that signals derived from said array are held by said storage device.

6. A sensor for compound detection, the sensor comprising a receptacle for a micro-electrode array, said receptacle having a connector for receiving electrical signals from said array when received in said receptacle, an amplifier for amplifying said signals and a processor, the processor being operable in response to said signals to determine a vector quantity having a number of dimensions equal to a number of features derived from the electrical output of said micro-electrode array with each component of said vector being representative of a change in said feature.

7. A sensor as claimed in Claim 6, further including a memory, said memory containing a library of features characterising known compounds such that classification of said vector enables identification of the compound deposited, in use, on said array,

8. A sensor as claimed in Claim 6 or Claim 7, wherein the memory is integral therewith.

9. A micro-electrode array for use in compound analysis, the array comprising a bio-compatible substrate having a plurality of electrodes situated thereon, said electrodes being coupled to a connector, said connector providing, in use, electrical connectivity to an analysis apparatus, wherein the array further includes a memory coupled to said connector, said memory being accessible, in use, by said analysis apparatus.

10. A computer program product in a computer-readable medium for use in a compound analysis apparatus, the computer program product comprising determining a vector quantity having a number of dimensions equal to a number of features derived from an electrical output of a micro-electrode array with each component of said vector being representative of a change in said feature, accessing a memory containing a library of features characterising known compounds and classifying said vector in order to identify a compound deposited, in use, on said array.

11. A computer program product as claimed in Claim 10, including determining a level of statistical reliability applicable to said identification of said compound.

12. A compound analysis system, substantially as hereinbefore described with reference to Figure 1 of the accompanying drawings.

13. A sensor for compound detection, substantially as hereinbefore described with reference to Figure 4 of the accompanying drawings.